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SOME NOTES ON ECHINOCHLOA

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THE native North American *Echinochloa pungens* (Poir.) Rydb. was differentiated, under the name *E. muricata* (Michx.) Fernald, from the introduced *E. crusgalli* (L.) Beauv., by Fernald, RHODORA xvii. 106 (1915) and by Wiegand, RHODORA xxiii. 50-52 (1921). The characters separating them were largely quantitative; *E. muricata* was described as having the spikelets more bristly and the tip of the coriaceous lemma firmer than in *E. crusgalli*. Further to blur the differences between the species, two varieties of *E. muricata* were described by Wiegand, characterized by having less bristly spikelets.

It is therefore reassuring to observe a definite and qualitative, though minute, difference. In *E. crusgalli* the tip of the coriaceous lemma is dark, dull, wrinkled and sharply differentiated from the smooth lustrous body of the lemma; the lustrous portion bears, just below the junction with the wrinkled tip, a ring of minute setae. These setae are about the size of the smallest pubescence on the glumes and sterile lemma, and their detection requires considerable magnification. In *E. pungens* (*E. muricata*) the texture of the fertile lemma blends gradually from the smooth lustrous body to the dull wrinkled tip without a line of demarkation and without a ring of setae, although the distal portion of the withered tip is sometime setulose.

All of the European material of *E. crusgalli* in the Gray Herbarium was found to have the ring of setulae on the coriaceous lemma. Identifications of most North American collections,

separated into *E. crusgalli* and *E. pungens*, appear correct, with an unfortunate exception. A collection from Grand Tower, Illinois, *H. A. Gleason 1720*, with rather small and only slightly bristly spikelets, has a ring of setae on the coriaceous lemma, and is *E. crusgalli*. This sheet is the TYPE of *E. muricata* var. *occidentalis* Wiegand, and so the basis of *E. pungens* var. *occidentalis* (Wiegand) Fernald & Griscom, RHODORA xxxvii. 137 (1935) and of *E. occidentalis* (Wiegand) Rydberg, Brittonia i. 82 (1931). Wiegand's variety is good, and all his cited specimens clearly belong with it, excepting only the type. But the name must stand or fall with the type; *E. muricata* var. *occidentalis* becomes a synonym of *E. crusgalli* and a new name must be applied to the concept described by Wiegand.

ECHINOCHLOA PUNGENS (Poir.) Rydb., var. **Wiegandii** nom. nov. *E. muricata* var. *occidentalis* Wiegand, RHODORA xxiii. 58 (1921), as to description and cited specimens except the TYPE. AS TYPE of var. *Wiegandii* the following may be specified: sandy roadside, Hayden Island, Oregon, September 8, 1915, *J. C. Nelson 1974*, in the Gray Herbarium.

Professor Wiegand's treatment of the subdivisions of *E. muricata* recognizes essentially four recombinations of two sets of characters, involving the size and the armature of spikelets. Typical *E. muricata* (now typical *E. pungens*) has large bristly spikelets; var. *ludoviciana* has large less bristly spikelets; "var. *occidentalis*" (*E. pungens* var. *Wiegandii*) has smaller less bristly spikelets; and vars. *microstachya* and *multiflora* have small spikelets with many spreading bristles with swollen bases. Those who, like the present writer, are impressed with the long-acuminate spikelets (*multiflora*-like) and the long panicles reaching 30 or 35 cm. in specimens of var. *microstachya* from the northern states, and so find themselves unable to distinguish var. *multiflora* from var. *microstachya*, may unite them under the name var. *microstachya*.

The more recently described *E. pungens* var. *coarctata* Fernald & Griscom, RHODORA xxxvii. 136 (1935), "differs from the other described varieties in having the sterile lemma glabrous or merely puberulent on the back, with the bullate-based spicules few and marginal or very rarely on the keel." This is precisely the distribution of spicules on most material of typical *E. pungens*,

from which the writer is unable to separate the type specimen of var. *coarctata*. A second sheet determined as this variety, from Cornland, Norfolk Co., Virginia, *Fernald & Long 13881*, is quite different in aspect; its narrowly ellipsoid coriaceous lemma, awned second glumes, and slightly hispid sheaths place it with *E. Walteri*.

In *E. colonum* and *E. frumentacea* the coriaceous lemma has a ring of setae closely resembling that of *E. crusgalli*. *E. zelayensis* and *E. Walteri* lack the ring of setae.

In *E. crus-pavonis* and its var. *decipiens*¹ the tip of the coriaceous lemma is a little more sharply demarked from the lustrous body than in *E. pungens*, but there is no ring of setae. *E. crus-pavonis* has been much confused with *E. crusgalli* but the two may be readily separated by this character. *E. crus-pavonis* proves to be much more common in South America than is *E. crusgalli*: in fact there are in the Gray Herbarium but two sheets of the latter (both from Argentina) as against more than 30 of *E. crus-pavonis*, most of which had originally been labelled as *E. crusgalli*. In Mexico, *E. crusgalli* seems to be present but less common than *E. crus-pavonis*.

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TWO SPECIES OF OXYBAPHUS IN INDIANA.—Both of these are included in Deam's "Excluded Species" in his "Flora of Indiana", each having been reported but once, and that long ago. *O. linearis* I found in considerable quantity in open rather sterile soil on the Nickel Plate Railroad east of Hobart in Lake Co., very near Porter Co. Deam says: "Reported in 1902 by Dorner as established along the Wabash Railroad near Lafayette." This is well over 100 miles from Hobart. I have known the species in the Hobart locality for many years, and, while it has not spread any considerable distance, it seems to be thoroughly established.

O. hirsutus Deam says was "reported to Coulter for Jenkins as found in Wabash Co." This station, while nearer Hobart than the preceding, is still a considerable distance away. This species I found in the same locality as *O. linearis*, and like it, it

¹ *E. CRUS-PAVONIS* (HBK.) Schult., var. *decipiens* (Wiegand) n. comb. *E. echinata* var. *decipiens* Wiegand, RHODORA xxiii. 61 (1921).